

Abstract

The dissertation presents the author's multi-criteria method of navigational safety assessment for the proposed variants of the designed waterway. This method comprehensively considers the most important environmental and technical aspects related to implementing the planned investment.

The issue developed by the author is part of the group of main strategic goals in the context of the development of seaports. Actions aimed at improving access to seaports are nowadays a challenge that must be faced by seaports operating the largest vessels. The lack of adequate infrastructure limits the possibilities for further development. Due to the simultaneous increase in the operational parameters of ships and the specialization in handling units specific to a given port, their operation for many ports becomes more and more difficult. Therefore, the selection of the appropriate project for the designed waterway is currently of interest to the maritime administration, port authorities, and future port users as an investment necessary to ensure the safety of these units and further development of the port.

This study describes and analyzes the current understanding of the concept of safety, maritime safety, and navigation safety in terms of maritime traffic engineering in the process of selecting a given variant of the designed waterway, which affects the efficiency and safety of vessel traffic after the investment is completed. The proposed author's method of navigational safety assessment for various variants of the planned waterway in a multi-criteria approach is a complex, multi-element process that allows for the assessment of most of the aspects determining the choice of the variant of the constructed waterway in a comprehensive manner. Additionally, the developed method was verified on the example of one of the prepared projects. The method can be used for the purposes of navigational analysis, i.e. an engineering document that meets the requirements of regulation of the competent Ministry (Regulation of the Minister of Transport and Maritime Economy of 23 October 2006 on technical conditions to be met by marine hydro-technical structures and their location), which is subject to agreement with the Director of the territorially competent Maritime Office.

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